Advanced Manufacturing Career Pathways

The Advanced Manufacturing Career Pathways are available at no cost to all Arkansans interested in exploring and pursuing a career in Advanced Manufacturing. There are 18 different Pathways, each consisting of a custom-designed package of free online courses to prepare you for a successful Advanced Manufacturing career.

The Advanced Manufacturing Career Pathways were created through a partnership between regional employers, training providers, Entergy Arkansas, and the Arkansas Department of Education to promote employment in these high-demand careers.

Click one of the links below to learn more about the Career Pathway you are interested in and to access courses that will help prepare you for that career.

Manufacturing Equipment Operator	3D CAD CAM Designer	Automated Material Handling
Maintenance Technician	Millwright & Rigger	High Voltage Line Worker
Maintenance Management	Automation Technician	CMM & Quality Assurance Technician
Industrial Electrician	Robotics Technician	Mobile & Jib Crane Operator
CNC Operator	Fabricator	Reliability Engineer
C&I Building Automation Technician	Refrigeration Technician	Equipment Installer
Chemical Operator / Loader		Pumper

Manufacturing Equipment Operator

Description:
Remove workpieces from machines and check to ensure that they conform to specifications, using measuring instruments such as microscopes, gauges, calipers, and micrometers. Observe milling or planing machine operation and adjust controls to ensure conformance with specified tolerances. Position and secure workpieces on machines, using holding devices, measuring instruments, hand tools, and hoists. Study blueprints, layouts, sketches, or work orders to assess workpiece specifications and to determine tooling instructions, tools and materials needed, and sequences of operations. Move controls to set cutting specifications, to position cutting tools and workpieces in relation to each other, and to start machines. Compute dimensions, tolerances, and angles of workpieces or machines, according to specifications and knowledge of metal properties and shop mathematics. Verify alignment of workpieces on machines, using measuring instruments such as rules, gauges, or calipers. Select cutting speeds, feed rates, and depths of cuts, applying knowledge of metal properties and shop mathematics. Move cutters or material manually or by turning handwheels, or engage automatic feeding mechanisms to mill workpieces to specifications, using hand tools or power tools. Record production output. Turn valves or pull levers to start and regulate the flow of coolant or lubricant to work areas. Mount attachments and tools such as pantographs, engravers, or routers to perform other operations such as drilling or boring.

Average Salary: $42,650

Courses
Below are the courses that will prepare for you for success in this career pathway:

- **Fundamentals of Manufacturing** (72 Hour Program)
- **Tooling U-SME – Manufacturing Awareness Training Package**
  - Introduction to CNC Machines 201
  - Basics of the CNC Lathe 211
  - Basics of the CNC Mill 212
  - Manual Mill Basics 201
  - Engine Lathe Basics 211
  - Intro to EDM 100
  - Machine Guarding 271
  - Safety for Metal Cutting 101
- **LinkedIn Learning – available for free through Ready for Life**
  - 3D Print Small Objects with Photoshop
  - Additive Manufacturing for Business
  - Autodesk Inventor Professional: Stress Analysis Tool
  - Designing a Replacement Part using 3D printing

3D CAD CAM Designer

Description:
Prepare detailed working diagrams of machinery and mechanical devices, including dimensions, fastening methods, and other engineering information. On the job, you will develop detailed design drawings and specifications for mechanical equipment, dies, tools, and controls, using computer-assisted drafting (CAD) equipment, lay out and draw schematic, orthographic, or angle views to depict functional relationships of components, assemblies, systems, and machines, and coordinate with and consult other workers to design, lay out,, or detail components and systems and to resolve design or other problems.

Average Salary: $55,130

Courses
Below are the courses that will prepare for you for success in this career pathway:

- Fundamentals of Manufacturing (72 Hour Program)
- **Tooling U-SME – Manufacturing Awareness Training Package**
  - Intro to OSHA 101
  - Walking and Working Surfaces 171
  - Fire Safety and Prevention 181
  - Safety for Lifting Devices 211
  - Respiratory Safety 131
  - Noise Reduction and Hearing Conservation 121
  - Flammable/Combustible Liquids 191
  - Personal Protective Equipment 111
  - Ergonomics 102
  - Environmental Safety Hazards 241
  - Confined Spaces 231
  - Lockout/Tagout Procedures 141
  - Bloodborne Pathogens 161
  - Rigging Inspection and Safety 210
  - Powered Industrial Truck Safety 221
- **LinkedIn Learning – available for free through Ready for Life**
  - 3D Printing a Scale Model with AutoCAD
  - Process Improvement Foundations
  - Project Management Foundations: Quality
  - AutoCAD 3D Essential Training
  - Quality Management Foundations

Automated Material Handling

Description:
Physically fit, hard working, and able to follow instructions rapidly and proficiently. You should swiftly learn to pay attention to what your team is doing, take all safety precautions, and learn to use many kinds of tools. You may work on different sites and crews doing a variety of jobs, so it is important to learn skills in several areas, and to be able to work well with different teams.

Average Salary: $27,040

Courses
Below are the courses that will prepare for you for success in this career pathway:

- **Fundamentals of Manufacturing** (72 Hour Program)
- **Tooling U-SME – Manufacturing Awareness Training Package**
  - Intro to OSHA 101
  - Walking and Working Surfaces 171
  - Fire Safety and Prevention 181
  - Safety for Lifting Devices 211
  - Respiratory Safety 131
  - Noise Reduction and Hearing Conservation 121
  - Flammable/Combustible Liquids 191
  - Personal Protective Equipment 111
  - Ergonomics 102
  - Environmental Safety Hazards 241
  - Confined Spaces 231
  - Lockout/Tagout Procedures 141
  - Bloodborne Pathogens 161
  - Rigging Inspection and Safety 210
  - Powered Industrial Truck Safety 221

- **LinkedIn Learning – available for free through Ready for Life**
  - Managing Logistics
  - Understanding Logistics
  - Understanding Personal Protective Equipment
  - Occupational Safety and Health Slips, Trips, and Falls

Maintenance Technician

Description:
Disassemble machinery or equipment to remove parts and make repairs. Repair or replace broken or malfunctioning components of machinery or equipment. Repair or maintain the operating condition of industrial production or processing machinery or equipment. Examine parts for defects, such as breakage or excessive wear. Reassemble equipment after completion of inspections, testing, or repairs, Observe and test the operation of machinery or equipment to diagnose malfunctions, using voltmeters or other testing devices. Operate newly repaired machinery or equipment to verify the adequacy of repairs. Clean, lubricate, or adjust parts, equipment, or machinery. Analyze test results, machine error messages, or information obtained from operators to diagnose equipment problems. Record repairs and maintenance performed. Study blueprints or manufacturers' manuals to determine correct installation or operation of machinery. Record parts or materials and order or requisition new parts or materials as necessary. Cut and weld metal to repair broken metal parts, fabricate new parts, or assemble new equipment. Demonstrated equipment functions and features to machine operators. Enter codes and instructions to program computer-controlled machinery.

Average Salary: $51,360

Courses
Below are the courses that will prepare for you for success in this career pathway:

- Fundamentals of Manufacturing (72 Hour Program)
- **Tooling U-SME – Maintenance Technician Training Package**
    - Electrical Units 101
    - Safety for Electrical Work 111
    - Basic Measurement 101
    - Calibration Fundamentals 111
    - Basics of Tolerance 121
    - Blueprint Reading 131
    - Hole Standards and Inspection 141
    - Thread Standards and Inspection 151
- **LinkedIn Learning – available for free through Ready for Life**
    - Customer Service: Problem Solving and Troubleshooting
    - Skilled Trades: Manufacturing Careers
    - A3 Problem Solving for Continuous Improvement
    - Understanding Personal Protective

Millwright & Rigger

Description:
Set up or repair rigging for construction projects, manufacturing plants, logging yards, ships and shipyards, or for the entertainment industry. On the job, you will signal or verbally direct workers engaged in hoisting and moving loads to ensure safety of workers and materials, test rigging to ensure safety and reliability, and attach loads to rigging to provide support or prepare them for moving, using hand and power tools.

Average Salary: $48,580

Courses
Below are the courses that will prepare for you for success in this career pathway:

- Fundamentals of Manufacturing (72 Hour Program)
- **Tooling U-SME – Manufacturing Awareness Training Package**
    - Intro to OSHA 101
    - Walking and Working Surfaces 171
    - Fire Safety and Prevention 181
    - Safety for Lifting Devices 211
    - Respiratory Safety 131
    - Noise Reduction and Hearing Conservation 121
    - Flammable/Combustible Liquids 191
    - Personal Protective Equipment 111
    - Ergonomics 102
    - Environmental Safety Hazards 241
    - Confined Spaces 231
    - Lockout/Tagout Procedures 141
    - Bloodborne Pathogens 161
    - Rigging Inspection and Safety 210
    - Powered Industrial Truck Safety 221

- **LinkedIn Learning – available for free through Ready for Life**
    - Construction Management: Reading Drawings & Speci cations
    - Construction Management: Safety & Health
    - Construction Management: Technology on the Jobsite
    - Construction Industry: Techniques and Technology
    - On the Job Site: Construction
    - Construction Management: Reading Civil Construction Drawing

High Voltage Line Worker

Description:
Install or repair cables or wires used in electrical power or distribution systems. May erect poles and light or heavy duty transmission towers. On the job you will adhere to safety practices and procedures, such as checking equipment regularly and erecting barriers around work areas, test conductors, according to electrical diagrams and specifications, to identify corresponding conductors and to prevent incorrect connections, and open switches or attach grounding devices to remove electrical hazards from disturbed or fallen lines or to facilitate repairs.

Average Salary: $69,380

Courses
Below are the courses that will prepare for you for success in this career pathway:

- **Fundamentals of Manufacturing** (72 Hour Program)
- **Tooling U-SME – Manufacturing Awareness Training Package**
  - Intro to OSHA 101
  - Walking and Working Surfaces 171
  - Fire Safety and Prevention 181
  - Safety for Lifting Devices 211
  - Respiratory Safety 131
  - Noise Reduction and Hearing Conservation 121
  - Flammable/Combustible Liquids 191
  - Personal Protective Equipment 111
  - Ergonomics 102
  - Environmental Safety Hazards 241
  - Confined Spaces 231
  - Lockout/Tagout Procedures 141
  - Bloodborne Pathogens 161
  - Rigging Inspection and Safety 210
  - Powered Industrial Truck Safety 221
- **LinkedIn Learning – available for free through Ready for Life**
  - Electronics Foundations: Fundamentals
  - Electronics Foundations: Basic Circuits
  - Construction Management: Safety & Health
  - Construction Industry: Techniques and Technology
  - On the Job Site: Construction
  - Construction Management: Managing Risk
  - Construction Management: Reading Civil Construction Drawings
  - Construction Industry: Safety

Maintenance Management

Description:
Determine schedules, sequences, and assignments for work activities, based on work priority, quantity of equipment, and skill of personnel. Monitor employees' work levels and review work performance. Examine objects, systems, or facilities and analyze information to determine needed installations, services, or repairs. Participate in budget preparation and administration, coordinating, purchasing and documentation and monitoring departmental expenditures. Counsel employees about work-related issues and assist employees to correct job-skill deficiencies. Requisition materials and supplies, such as tools, equipment, or replacement parts. Compute estimates and actual costs of factors such as materials, labor, or outside contractors. Interpret specifications, blueprints, or job orders to construct templates and lay out reference points for workers. Conduct or arrange for worker training in safety, repair, or maintenance techniques, operational procedures, or equipment use.

Average Salary: $64,780

Courses
Below are the courses that will prepare for you for success in this career pathway:

- Fundamentals of Manufacturing (72 Hour Program)
- **Tooling U-SME - Maintenance Training Package**
  - Overview of Threaded Fasteners 117
  - Tools for Threaded Fasteners 120
  - Overview of Non-Threaded Fasteners
  - Understanding Torque 210
  - Threaded Fastener Selection 215
  - Introduction to Fastener Threads 221
  - The Forces of Fluid Power 201
- **LinkedIn Learning – available for free through Ready for Life**
  - Electronic Foundations: Fundamentals
  - Process Improvement Foundations
  - Construction Management: Safety & Health
  - Lean Six Sigma: Define & Measure Tools
  - Project Management Foundations: Quality

Automation Technician

Description:
Works with mechanics and electronics to design automated systems. These automated systems help streamline the production of complicated products, like cars and cameras. A Mechatronics Technician uses computers and software which can help make products more affordable. Often work for large industrial companies and can specialize in a type of good, or in a method of production. As our machines become more complicated, the role will become even more important.

Average Salary: $97,250

Courses
Below are the courses that will prepare for you for success in this career pathway:

- **Fundamentals of Manufacturing** (72 Hour Program)
- **Tooling U-SME – Maintenance Training Package**
  - Overview of Threaded Fasteners 117
  - Tools for Threaded Fasteners 120
  - Overview of Non-Threaded Fasteners 125
  - Understanding Torque 210
  - Threaded Fastener Selection 215
  - Introduction to Fastener Threads 221
  - The Forces of Fluid Power 201
  - Safety for Hydraulics and Pneumatics 211
  - Introduction to Hydraulic Components 221
  - Introduction to Pneumatic Components 231
  - Introduction to Fluid Conductors 241
  - Fittings for Fluid Systems 251
  - Mechanical Power Variables 202
  - Bearing Applications 221
- **LinkedIn Learning – available for free through Ready for Life**
  - Process Improvement Foundations
  - Practical Engineering
  - Introducing Robotic Process Automation
  - Engineering Drawings for Manufacturing
  - Electrical Systems: Reading Drawings Schematics
  - UiPath: Robotic Process Automation
  - Quality Management Foundations
  - In the Shop: Manufacturing

CMM & Quality Assurance Technician

Description:
Discard or reject products, materials, or equipment not meeting specifications. Inspect, test, or measure materials, products, installations, or work for conformance to specifications. Record inspection or test data, such as weights, temperatures, grades, or moisture content, and quantities inspected or graded. Mark items with details such as grade or acceptance-rejection status. Measure dimensions of products to verify conformance to specifications, using measuring instruments such as rulers, calipers, gages, or micrometers. Collect or select samples for testing or for use as models. Compare colors, shapes, textures, or grades of products or materials with color charts, templates, or samples to verify conformance to standards. Write test or inspection reports describing results, recommendations, or needed repairs. Read blueprints, data, manuals, or other materials to determine specifications, inspection and testing procedures, adjustment methods, certification processes, formulas, or measuring instruments required. Notify supervisors or other personnel of production problems. Recommend necessary corrective actions, based on inspection results

Average Salary: $37,340

Courses
Below are the courses that will prepare for you for success in this career pathway:

- Fundamentals of Manufacturing (72 Hour Program)
- **Tooling U-SME –** Quality Training Package
    - Basic Measurement 101
    - Calibration Fundamentals 111
    - Basics of Tolerance 121
    - Blueprint Reading 131
    - Hole Standards and Inspection 141
    - Thread Standards and Inspection 151
    - Surface Texture and Inspection 201
    - Introduction to GD&T 301
    - Major Rules of GD&T 311
    - Inspecting a Prismatic Part 321
    - Inspecting a Cylindrical Part 331
    - Advanced Hole Inspection 341
    - Cutting Processes 111
- **LinkedIn Learning – available for free through Ready for Life**
    - Lean Six Sigma Foundations
    - Six Sigma: Green Belt
    - Business Process Improvement
    - Engineering Drawings for Manufacturing
    - Process Management Foundations: Quality
    - Quality Management Foundations

Industrial Electrician

Description:
As an Industrial Technician, you will repair, test, adjust, or install electronic equipment, such as industrial controls, transmitters, and antennas. On the job you will, test faulty equipment to diagnose malfunctions, using test equipment or software, and applying knowledge of the functional operation of electronic units and systems, study blueprints, schematics, manuals, or other specifications to determine installation procedures, repair or adjust equipment, machines, or defective components, replacing worn parts, such as gaskets or seals in watertight electrical equipment.

Average Salary: $57,190

Courses
Below are the courses that will prepare for you for success in this career pathway:

- **Fundamentals of Manufacturing** (72 Hour Program)
- **Tooling U-SME - Maintenance Training Package**
  - Introduction to CNC Machines 201
  - Control Panel Functions for the CNC
  - Lathe 251
  - Control Panel Functions for the CNC
  - Mill 252
  - Introduction to Circuits 201
  - Introduction to Magnetism 211
  - DC Circuit Components 221
  - NEC(R) Overview 231
  - AC Fundamentals 241
  - Electrical Instruments 251
  - Electrical Print Reading 261
  - Conductor Selection 291
  - Series Circuit Calculations 301
  - Parallel Circuit Calculations 311
  - Troubleshooting 181
- **LinkedIn Learning – available for free through Ready for Life**
  - Process Improvement Foundations
  - Lean Six Sigma Foundations
  - Six Sigma: Green Belt
  - Operational Excellence Foundations
  - Lean Deep Dive: Job Instruction
  - Project Management Foundations: Quality

Robotics Technician

Description:
Responsible for designing and maintaining robots. You will work as part of a team to design, build, and repair robots that will replace a living agent. Robotic maintenance technicians are employed by either the manufacturers or distribution of robots, and will often be responsible for installing robots at onsite locations

Average Salary: $56,740

Courses
Below are the courses that will prepare for you for success in this career pathway:

- Fundamentals of Manufacturing (72 Hour Program)
- **Tooling U-SME – Maintenance Training Package**
    - Intro to OSHA 101
    - Walking and Working Surfaces 171
    - Fire Safety and Prevention 181
    - Safety for Lifting Devices 211
    - Respiratory Safety 131
    - Noise Reduction and Hearing
    - Conservation 121
    - Flammable/Combustible Liquids 191
    - Personal Protective Equipment 111
    - Ergonomics 102
    - Environmental Safety Hazards 241
    - Confined Spaces 231
    - Lockout/Tagout Procedures 141
    - Bloodborne Pathogens 161
    - Rigging Inspection and Safety 210
    - Powered Industrial Truck Safety 221
    - Safety for Metal Cutting 101
    - Machine Guarding 140
- **LinkedIn Learning – available for free through Ready for Life**
    - Mograph Techniques: Rigging a Robot Arm in Cinema 4D
    - Introducing Robotic Process Automation
    - Robot Framework Test Automation: Level 1 (Selenium)
    - Robot Framework Test Automation: Level 2
    - Robot Framework Test Automation: Jenkins CI and Git Version Control
    - Robot Framework Test Automation: Sauce Labs
    - Cisco DevNet Associate Cert Prep 2: Understanding and Using APIs

Mobile & Jib Crane Operator

Description:
Crane operators use cranes and draglines to lift, move and place machinery and other large objects. They also perform inspections, along with regular maintenance. In addition, crane operators test and prepare rigs and hoists. There are many different types of crane (truck, gantry, tower), and each type has its own challenges and rewards. Operators work on construction sites at ports and rail yards, and on all kinds of industrial sites.

Average Salary: $52,200

Courses
Below are the courses that will prepare for you for success in this career pathway:

- **Fundamentals of Manufacturing** (72 Hour Program)
- **Tooling U-SME – Manufacturing Awareness Training Package**
    - Intro to OSHA 101
    - Walking and Working Surfaces 171
    - Fire Safety and Prevention 181
    - Safety for Lifting Devices 211
    - Respiratory Safety 131
    - Noise Reduction and Hearing Conservation 121
    - Flammable/Combustible Liquids 191
    - Personal Protective Equipment 111
    - Ergonomics 102
    - Environmental Safety Hazards 241
    - Confined Spaces 231
    - Lockout/Tagout Procedures 141
    - Bloodborne Pathogens 161
    - Rigging Inspection and Safety 210
    - Powered Industrial Truck Safety 221
- **LinkedIn Learning – available for free through Ready for Life**
    - Supply Chain Foundations
    - Construction Management: Concrete Construction
    - Construction Management: Reading Drawings & Speci cations
    - Construction Management: Safety & Health
    - Construction Management: Technology on the Jobsite
    - Construction Industry: Techniques and Technology
    - On the Job Site: Construction

CNC Operator

Description:
Operate computer-controlled machines or robots to perform one or more machine functions n metal or plastic work pieces. On the job you will measure dimensions of finished workpieces to ensure conformance to specifications, using precision measuring instruments, templates, and fixtures, mount, install, align, and secure tools, attachments, fixtures, and workpieces on machines, using hand tools and precision measuring instruments, and stop machines to remove finished workpieces or to change tooling, setup, or workpiece placement, according to required machining sequences.

Average Salary: $52,480

Courses
Below are the courses that will prepare for you for success in this career pathway:

- **Fundamentals of Manufacturing** (72 Hour Program)
- **Tooling U-SME – Machining Training Package**
  - Introduction to CAD and CAM for
  - Machining 241
  - Creating a CNC Turning Program 301
  - Creating a CNC Milling Program 302
  - Calculations for Lathe Programming
  - Calculations for Programming the Mill
  - Canned Cycles for the Lathe 321
  - Canned Cycles for the Mill 322
  - Introduction to GD&T 301
  - Major Rules of GD&T 311
  - In-Line Inspection Applications 381
  - Intro to Six Sigma 171
  - Metrics for Lean 231
  - Introduction to Metals 121
  - Speed and Feed for the Lathe 301
  - Speed and Feed for the Mill 311
- **LinkedIn Learning – available for free through Ready for Life**
  - Process Improvement Foundations / Electronics Foundations: Semiconductor
  - Devices / Electronics Foundations: Basic Circuits / Operational Excellence
  - Foundations / Learning Soldering for Electronics / Quality Management
  - Foundations / In the Shop: Manufacturing

Fabricator

Description:
Fabricate, position, align, and fit parts of structural metal products. On the job you will verify conformance of workpieces to specifications, using squares, rulers, and measuring tapes, align and fit parts according to specifications, using jacks, turnbuckles, wedges, drift pins, pry bars, and hammers, and move parts into position, manually or with hoists or cranes.

Average Salary: $38,450

Courses
Below are the courses that will prepare for you for success in this career pathway:

- Fundamentals of Manufacturing (72 Hour Program)
- **Tooling U-SME – Forming Fabricating Stamping Training Package**
    - Types of Adhesives 140
    - Introduction to CNC Machines 201
    - Basics of the CNC Lathe 211
    - Basics of the CNC Mill 212
    - Coordinates for the CNC Lathe 221
    - Coordinates for the CNC Mill 222
    - Basics of G Code Programming 231
    - Introduction to CAD and CAM for Machining 241
    - Control Panel Functions for the CNC Lathe 251
    - Control Panel Functions for the CNC Mill 252
    - O sets on the CNC Lathe 261
    - O sets on the CNC Mill 262
    - Creating a CNC Turning Program 301
    - Creating a CNC Milling Program 302
    - Calculations for Programming the Lathe 311
- **LinkedIn Learning – available for free through Ready for Life**
    - Inventor: Sheet Metal Design
    - Operations Management Foundations
    - Excel: Statistical Process Control
    - SOLIDWORKS: Sheet Metal Design
    - Introduction to Geometric

Reliability Engineer

Description:
Disassemble machinery or equipment to remove parts and make repairs. Repair or replace broken or malfunctioning components of machinery or equipment. Repair or maintain the operating condition of industrial production or processing machinery or equipment. Examine parts for defects, such as breakage or excessive wear. Reassemble equipment after the completion of inspections, testing, or repairs. Observe and test the operation of machinery or equipment to diagnose malfunctions, using voltmeters or other testing devices. Operate newly repaired machinery or equipment to verify the adequacy of repairs.

Average Salary: $54,280

Courses
Below are the courses that will prepare for you for success in this career pathway:

- **Fundamentals of Manufacturing** (72 Hour Program)
- **Tooling U-SME – Engineering Training Package**
  - Basic Measurement 101
  - Calibration Fundamentals 111
  - Basics of Tolerance 121
  - Blueprint Reading 131
  - Hole Standards and Inspection 141
  - Thread Standards and Inspection 151
  - Surface Texture and Inspection 201
  - Introduction to GD&T 301
  - Major Rules of GD&T 311
  - Inspecting a Prismatic Part 321
  - Inspecting a Cylindrical Part 331
  - Advanced Hole Inspection 341
  - Inspecting with Optical Comparators
  - Inspecting with CMMs 361
  - Calibration and Documentation 371
  - In-Line Inspection Applications 381
  - Lean Manufacturing Overview 101
  - 5S Overview 151
  - SPC Overview 211
  - Introduction to Mechanical Properties
- **LinkedIn Learning – available for free through Ready for Life**
  - Process Improvement Foundations
  - Operational Excellence Foundations
  - Design Foundations: Prototyping and Manufacturing
  - Skilled Trades: Manufacturing Careers

C&I Building Automation Technician

Description:
As a Commercial & Industrial Building Automation Technician, you will design, develop, or evaluate energy-related projects or programs to reduce energy costs to improve energy efficiency during the designing, building, or remodeling stages of construction specializing in heating, ventilation, and air-conditioning (HVAC) systems.

Average Salary: $103,880

Courses
Below are the courses that will prepare for you for success in this career pathway:

- Fundamentals of Manufacturing (72 Hour Program)
- **Tooling U-SME - Maintenance Training Package**
  - Introduction to CNC Machines 201
  - Control Panel Functions for the CNC
  - Lathe 251
  - Control Panel Functions for the CNC
  - Mill 252
  - Introduction to Circuits 201
  - Introduction to Magnetism 211
  - DC Circuit Components 221
  - NEC(R) Overview 231
  - AC Fundamentals 241
  - Electrical Instruments 251
  - Electrical Print Reading 261
  - Conductor Selection 291
  - Series Circuit Calculations 301
  - Parallel Circuit Calculations 311
  - Troubleshooting 181

- **LinkedIn Learning – available for free through the Ready for Life platform**
  - Process Improvement Foundations
  - Learn Industrial Automation
  - Introducing Robotic Process Automation
  - Project Management Foundations: Quality
  - In the Shop: Manufacturing

Refrigeration Technician

Description:
Operate or tend equipment such as cooling and freezing units, refrigerators, batch freezers, and freezing tunnels, to cool or freeze products, food, blood plasma, and chemicals.

Average Salary: $27,480

Courses
Below are the courses that will prepare for you for success in this career pathway:

- Fundamentals of Manufacturing (72 Hour Program)
- **Tooling U-SME – Manufacturing Awareness Training Package**
    - Intro to OSHA 101
    - Walking and Working Surfaces 171
    - Fire Safety and Prevention 181
    - Safety for Lifting Devices 211
    - Respiratory Safety 131
    - Noise Reduction and Hearing Conservation 121
    - Flammable/Combustible Liquids 191
    - Personal Protective Equipment 111
    - Ergonomics 102
    - Environmental Safety Hazards 241
    - Confined Spaces 231
    - Lockout/Tagout Procedures 141
    - Bloodborne Pathogens 161
    - Rigging Inspection and Safety 210
    - Powered Industrial Truck Safety 221
- **LinkedIn Learning – available for free through Ready for Life**
    - Electronics Foundations: Fundamentals
    - Electronics Foundations: Basic Circuits
    - Learning Soldering for Electronics
    - Occupational Safety and Health: Working in the Heat
    - Occupational Safety and Health: Slips, Trips, and Falls
    - Electrical Systems: Reading Drawings and Schematics

Equipment Installer

Description:
Install, adjust, or maintain mobile electronics communication equipment, including sound, sonar, security, navigation, and surveillance systems on trains, watercraft, or other mobile equipment. On the job you will inspect and test electrical systems and equipment to locate and diagnose malfunctions, using visual inspections, testing devices, and computer software, reassemble and test equipment after repairs, and splice wires with knives or cutting pliers, and solder connections to fixtures, outlets, and equipment.

Average Salary: $60,840

Courses
Below are the courses that will prepare for you for success in this career pathway:

- **Fundamentals of Manufacturing** (72 Hour Program)
- **Tooling U-SME – Manufacturing Awareness Training Package**
    - Intro to OSHA 101
    - Walking and Working Surfaces 171
    - Fire Safety and Prevention 181
    - Safety for Lifting Devices 211
    - Respiratory Safety 131
    - Noise Reduction and Hearing Conservation 121
    - Flammable/Combustible Liquids 191
    - Personal Protective Equipment 111
    - Ergonomics 102
    - Environmental Safety Hazards 241
    - Confined Spaces 231
    - Lockout/Tagout Procedures 141
    - Bloodborne Pathogens 161
    - Rigging Inspection and Safety 210
    - Powered Industrial Truck Safety 221

- **LinkedIn Learning – available for free through Ready for Life**
    - Additive Manufacturing for Business
    - Additive Manufacturing: Metal 3D Printing
    - Composite Design and Manufacturing 01: Process and Materials
    - Composite Design and Manufacturing 02: Product Development and Simulation
    - Composite Design and Manufacturing 03: Validation and Production

Chemical Operator / Loader

Description:
Operates, regulates, and monitors chemical process or batch reactor units and auxiliary equipment to produce products under supervision of the Lead Operator or shift leader. Essential duties and responsibilities include: receiving general work instructions orally, from emails, data files and/or from log sheets; monitoring gages and recording instruments and adjusts valves and controls to regulate temperatures, pressures, concentration of solutions and flow of chemicals through the process systems for prescribed reaction within critical limits, according to log sheets and based on prior experience with equipment/process; monitoring equipment for possible PM/PD routine repair and interface with Area maintenance on maintenance needs; performing minor maintenance and assist in unloading raw materials, and general cleanup work; transferring materials from one drum to another; moving finished products to tank farm and loading bulk products into tank trucks; assuring that company and plant policies and procedures are followed; writing permits; providing instruction and OJT to less experienced operators and trainees who assist in and processing operations.

Average Salary: $36,560

Courses
Below are the courses that will prepare for you for success in this career pathway:

- **Fundamentals of Manufacturing** (72 Hour Program)
- **Tooling U-SME – Manufacturing Awareness Training Package**
  - Intro to OSHA 101
  - Walking and Working Surfaces 171
  - Fire Safety and Prevention 181
  - Safety for Lifting Devices 211
  - Respiratory Safety 131
  - Noise Reduction and Hearing Conservation 121
  - Flammable/Combustible Liquids 191
  - Personal Protective Equipment 111
  - Ergonomics 102
  - Environmental Safety Hazards 241
  - Confined Spaces 231
  - Lockout/Tagout Procedures 141
  - Bloodborne Pathogens 161
  - Rigging Inspection and Safety 210
  - Powered Industrial Truck Safety 221

Pumper

Description:
Operates, regulates, and monitors chemical pumps and equipment to produce products under supervision of the shift leader. Essential duties and responsibilities include: loading deliveries and shipments of highly reactive chemicals that include Bromine, HBr, Ammonia, and Chlorine; loading and unloading of Railcars, Tank Trailers, and ISOs; operation of yard mule to move tank trailers and ISOs; working at elevated heights; exposure to harsh chemicals; requires wearing safety protection, despite the weather conditions, that could include a slicker suit and respirator; rotating 12-hour shift work, which includes hours worked in the evenings and over the weekend; willing to work call outs and overtime.

Average Salary: $60,220

Courses
Below are the courses that will prepare for you for success in this career pathway:

- **Fundamentals of Manufacturing** (72 Hour Program)
- **Tooling U-SME – Manufacturing Awareness Training Package**
  - Intro to OSHA 101
  - Walking and Working Surfaces 171
  - Fire Safety and Prevention 181
  - Safety for Lifting Devices 211
  - Respiratory Safety 131
  - Noise Reduction and Hearing Conservation 121
  - Flammable/Combustible Liquids 191
  - Personal Protective Equipment 111
  - Ergonomics 102
  - Environmental Safety Hazards 241
  - Confined Spaces 231
  - Lockout/Tagout Procedures 141
  - Bloodborne Pathogens 161
  - Rigging Inspection and Safety 210
  - Powered Industrial Truck Safety 221